EXECUTIVE SUMMARY
AIRCRAFT ACCIDENT INVESTIGATION
QF-4E, S/N 68-0320
HOLLOMAN AIR FORCE BASE, NEW MEXICO

22 May 2003

On 22 May 2003, at 0811 local time, a QF4-E drone, S/N 68-0320, was intentionally destroyed by the ground station at White Sands Missile Range due to the drone losing contact with the ground station. The crash occurred 13 miles northwest of Holloman AFB on the confines of the White Sands Missile Range (WSMR). The QF4-E was assigned to the 82 ATRS, 53 WG, Eglin AFB, Florida. The QF-4E was being operated by the 82 ATRS, Det 1 at Holloman AFB. The QF-4E was functioning as a Full Scale Aerial Target Remotely Piloted Vehicle supporting a live AIM-9X mission and was unmanned. The QF-4E was scheduled to be destroyed during the mission profile by an AIM-9 air to air missile; however, it was blown up by the ground control station before it could act as a target for the missile shoot. There were no injuries and, other than the loss of the aircraft itself, there was no property damage.

Shortly after takeoff, at approximately 100' AGL, a Loss of Carrier (LOC) signal was detected from the mishap FSAT. The QF-4 drone program uses a dual Command Telemetry System (CTS) to command from the ground station and receive data to the ground station concerning the drone's health and status. An LOC is a situation where the ground portion of the drone control system is no longer able to send commands or receive information from the drone. The QF-4 Automatic Flight Control System contains a number of pre-planned profiles in case of LOC. In this case, the mishap FSAT began the after takeoff LOC profile, which commanded a 12 degree nose high climb, a speed of 300 Nautical Miles per hour (Knots) Indicated Air Speed (KIAS) and a turn to 310 degrees (Northwest) heading. This profile is designed to keep the drone clear of obstacles, out of other aircraft flight paths, clear of the terrain, provide a direct line of sight for enhanced communications, and move the drone over the center of the WSMR where it can be safely destroyed if necessary. While climbing through approximately 15,000' Mean Sea Level (MSL), the mishap FSAT was intentionally destroyed by ground controllers using the ground-based UHF Flight Termination System (FTS). The mishap FSAT was destroyed in the air and fell to earth in a remote area of White Sands Missile Range in two large pieces.

Based on clear and convincing evidence this mishap was caused by a Loss of Carrier (LOC) to the Full Scale Aerial Target (FSAT), QF-4E Aircraft S/N 68-0320. There is clear and convincing evidence that dual Command Telemetry System (CTS) failure was the reason for the LOC. Once the Range Safety Officer, Mission Commander (MC) and FSAT Controller determined the FSAT was truly LOC, the MC directed the Mobile Control Station (MCS) to destroy the drone prior to completing the mission.